

CLAIMS

1 1. A die containing package comprising:
2 a die defining electrical die contacts,
3 a substrate defining first substrate contacts,
4 flattened electrical conductive balls attached to the die contacts and making
5 electrical connection thereto,
6 electrical conductive runs on the substrate connecting the first substrate contacts
7 to second substrate contacts,
8 electrically conductive wires with one end connected to the first substrate con-
9 tacts, wherein the wires are formed to run substantially parallel to the surface of the die
10 to the die contacts,
11 means for making electrical connection between the die contacts and the other
12 end of the wires.

1 2. The die containing package of claim 1 further comprising:
2 a frame defining first leads defining first frame contacts, and
3 means for making electrical connections between the first frame contacts and
4 the second contacts on the substrate.

1 3. The die containing package of claim 1 wherein the second substrate contacts are
2 located on the substrate opposite the first substrate contacts.

1 4. The die containing package of claim 1 wherein the second substrate contacts are
2 located on the substrate to accommodate a pin out different from the die.

1 5. A process for packaging a die comprising the steps of:
2 defining electrical die contacts,
3 defining a substrate with first substrate contacts,
4 flattening an electrical conductive balls,
5 attaching the flattened electrically conductive ball to the die contacts,
6 forming electrical conductive runs on the substrate connecting the first substrate
7 contacts to second substrate contacts,

8 connecting electrically conductive wires to the first substrate contacts,
9 running the electrically conductive wires substantially parallel to the surface of
10 the die to the die contacts, and
11 making electrical connection between the die contacts and the other end of the
12 wires.

1 6. The process of claim 5 further comprising the steps of:
2 defining etched runs with first electrical contacts on the printed circuit board,
3 providing a frame,
4 defining first frame contacts on the frame,
5 defining first leads on the frame,
6 making electrical connections between the first frame contacts and the second
7 contacts on the substrate.

1 7. The process of claim 5 further comprising the step of locating the second sub-
2 strate contacts on the substrate opposite the first substrate contacts.

1 8. The process of claim 5 further comprising the step of locating the second sub-
2 strate contacts on the substrate to accommodate a pin out different from the die.